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fossil drift-wood buried in the ancient banks now some two hundred feet above the present level. These remains indicate a far more abundant vegetation than at present, and that when the lakes spread their broad sheets over the now barren valleys, and the rivers were near the surface of the Mesa, all the land was covered by great forests of pine, among which huge elephants roamed and cropped the succulent leaves. Time has sapped this green, luxuriant youthfulness, and in its seared and wrinkled old age, though grander and more majestic, the country is bald and unfruitful.

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## THE RUFFED GROUSE.

BY AUGUSTUS FOWLER.

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THIS beautiful bird, the *Bonasa umbella*, is a resident in Massachusetts. It commences breeding very early in the season, so early indeed, that the nest and birds are frequently covered with the late snows.

It is at this time of the year, more than at any other, that the male practices the peculiar habit of drumming, to call his mate. He usually selects for the purpose the trunk of some fallen tree, and, mounting it, struts back and forth, with tail expanded and head thrown back and wings lowered till they drag upon the log. These are the preliminary movements. Suddenly he stops, throws his head forward, lowers his tail, compresses his feathers, and then commences to strike his sides with his wings, increasing the rapidity of the strokes, until the sound produced resembles low distant thunder.

They build their nest on the ground, in some secluded place, under a brush-heap, or by a log or fallen fence. It is composed of whatever suitable materials lie about the spot, such as dried grass, twigs, and dried leaves. After the

female commences laying she lays every day, until towards the last end of the litter, when she lays every other day, until she has laid ten, twelve, and sometimes fifteen eggs. These she places around the nest in circles, that each may receive an equal degree of warmth while she is sitting upon them. When she leaves them, she sometimes covers them with grass or leaves, but not always.

The inside of the nest measures five and a half inches, its depth two and a half inches. The color of the eggs is yellowish-white, marked with reddish-brown spots. Usually the last ones of the litter are without spots, and of a lighter color, a few larger round spots appear to be laid on the surface of the shell and raised above it. Sometimes a nest of the Ruffed Grouse is found to contain a litter of pure white eggs. This difference in the color of the eggs may arise in consequence of the first nest of the bird being destroyed. In connection with this I will mention an instance of a blue-bird that was robbed of her eggs in succession, until she produced pure white ones. Her first litter was taken in April, whereupon she immediately laid another litter of a lighter color than the first. These being taken, she laid another litter of four eggs, of a still lighter color than the second. This third litter was also taken from her, when she laid one more of three eggs, entirely white. The Marsh-hawk lays from six to eight eggs for the first litter, which are all distinctly marked, with the exception of one or two that are laid last. If this first litter is destroyed and she lays again soon, the eggs will hardly have a perceptible spot upon them. For this reason no birds' eggs should be described, or preserved as typical specimens, except those laid first in the season.

When the female Grouse begins to sit, the male forsakes her and rambles about alone, or in company with other males, until autumn. Then he returns, and the birds keep together till the following spring, when they separate in pairs to breed.

Under different circumstances the female uses different artifices to preserve her young. If she sees a person approaching, and cannot lead her young brood away before she suffers the intruder to come too near, she utters a low clucking note, and in an instant every chick is hid, and will remain so until called by her; while she, in the mean time, walks slowly away, keeping her eye fixed on the intruder, and occasionally stopping and standing on one leg. If you still advance, she walks as before, appearing as though there was nothing very interesting about the place, until she gets behind a tree or bush, when the whirring of her wings tells that she has flown away. Many a person has been led away by this manœuvre, while she returns by a circuitous route to the rear, and alighting near her young, calls them to her. When suddenly alarmed, the brood as before hide under the leaves and rubbish, while she feigns lameness, and if not followed, usually returns bristling her feathers and fluttering about. And if your foot is presented to her, she will strike at it in the same manner as a domestic hen when defending her chickens. The young follow their mother from the day they are hatched until they are fully grown, and even until the following spring.

So ardently is this beautiful game-bird sought for, that many are destroyed every year, not only with the gun, but by every contrivance of snare and trap; and by the last two methods whole broods are taken before they have reached maturity. If such indiscriminate slaughter should continue for a few years to come as in times past, we shall have cause to regret that effective measures were not taken for the preservation of this noble bird.

The Ruffed Grouse is born to be free, and if reduced to slavery, will die rather than submit to such degradation. He scorns to be a domestic bird, and chooses the wild forests, where, with a proud step and erect head, he walks with that haughty bearing which indicates his free spirit.